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10 Editing out unsustainability from consumption: From information provision to nudging and social practice theory

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1. Introduction

Human actions have already exceeded many planetary boundaries (Steffen et al., 2015). In order to stay within the safe operating space, both decarbonization and dematerialization by a factor of ten or more are deemed necessary (Bringezu, 2015; Jackson, 2009; Tukker et al., 2010). These targets require changes in consumption patterns: the utilization of products, services and infrastructure, from acquisition and use to disposal (Girod et al., 2014).

This chapter illustrates the journey from 'mainstream paradigms' of studying and steering consumption towards sustainability (Keller et al., 2016), to a critique of these approaches, and the latest ideas on how to make consumption more sustainable.

The traditional approach to sustainable consumption draws on cognitive approaches, viewing consumers as choice-makers whose decisions are supported by improved information and product labelling (Heiskanen et al., 2014). More recently, behavioural models have gained traction following increased policy interest in behavioural economics. These models have provided stimuli for designing better choice architectures that 'nudge' consumers to behave in accordance with the conservation of public goods, such as the global environment (Nagatsu, 2015; Schubert, 2017).

Most of the work drawing on economic and psychological models is methodologically individualist: it views consumers as isolated actors, rather than members of a consumer society. A more sociological approach looks beyond individual consumers to the historical, structural and cultural factors shaping consumer society (Shove and Spurling, 2013). Social practice theory represents the newest entrant into the field of sustainable consumption research and policy discourse, and investigates how daily practices are shaped by established services and technologies, by shared norms, conventions and capabilities, as well as by organizational, institutional and political rules (for example, Geels et al., 2015; Shove, 2014).

We review the contributions of these three fields of research on sustainable consumption, with examples from residential energy use. We consider the contribution of each paradigm to 'strong sustainable consumption', emphasizing the need for a reduction in overall resource use rather than in the environmental impacts of individual products (Fuchs and Lorek, 2005). Furthermore, strong sustainable consumption considers people not only as consumers but also as citizens, and emphasizes the social embeddedness of consumption (Lorek and Fuchs, 2013). Since sustainable consumption is not only an academic field, we also focus on policy relevance and policy implications. Given its rising prominence, we devote more attention to social practice theory than to the other perspectives. By doing so, we aim to provide an analysis of not only the promise, but also the policy challenges of social practice theory as a framework for 'editing out' unsustainability and reconfiguring consumer society.

2. The traditional approach to promoting sustainable consumption: Empowerment through information

Sustainable consumption emerged at a time when neoliberalism was gaining ground, and markets were seen as the solution to virtually every problem. The 1980s saw a rise of green consumer guides, green marketing and the first eco-labelling schemes. Green consumption was seen as a way of moving consumption patterns towards less unsustainable alternatives, for example, by reducing the chemicals in detergents. The promotion of household energy and resource conservation has an even longer pedigree, dating back to the oil crises of the 1970s (Geller and Attali, 2005). The overall aim has been to correct market failures by providing consumers with more and better information in order to raise awareness of environmental issues (for instance, understanding the environmental consequences of their actions) and facilitate pro-environmental choices in practice through task-related information.

These approaches, based on attitude–behaviour models (Ajzen, 1991; Ajzen and Fishbein, 2000) and value–belief–norm models (Stern, 2000) have dominated the research on both energy conservation and green consumption for several decades. The underlying assumption in such models is that consumers lack awareness of the environmental implications of their consumption patterns and that providing such information would to lead to behavioural changes. There is some – though not very strong – evidence to justify this expectation. Meta-analyses (Bamberg and Möser, 2007; Klöckner, 2013) show that awareness of environmental problems and the environmental consequences of actions explains about 4–5% of the variations in (self-reported) behaviour, whereas attitudes towards particular environmentally relevant behaviours (for example, recycling, energy conservation) explain about 13–18% of the variations in (self-reported) behaviour.[1]

A focus on enabling consumers to steer the market towards sustainability via information is still very evident, in European Union (EU) energy policies and the discourses related to the Energy Union and smart power grids, for example. In its 2015

Summer Package, the European Commission argued that 'citizens must be at the core of the Energy Union', which will be accomplished by 'helping consumers save money and energy through better information, giving consumers a wider choice of action when choosing their participation in energy markets and maintaining the highest level of consumer protection' (European Commission, 2015: 1). Similarly, in its proposal for a directive on an internal market for electricity, the European Commission relies on the power of information:

> Fully integrating industrial, commercial and residential consumers into the energy system can avoid significant costs for 'backup' generation; costs which consumers would otherwise end up paying. It even allows consumers to benefit from price fluctuations and to earn money through participation in the market. Activating consumer participation is therefore a prerequisite for managing the energy transition successfully and in a cost-effective way. (European Commission, 2016: 4)

The proposal that consumers can be empowered is obvious in energy markets where the earlier set-up of the market made enlightened consumer participation virtually impossible. Consumers have been excluded from active participation for decades and competition is a fairly recent phenomenon. The product itself is difficult to understand and billing practices have only recently begun to reflect underlying consumption patterns through quarter-yearly real-time billing rather than billing based on estimates with an annual settling of actual consumption (Burke and Stephens, 2017; Heiskanen and Matschoss, 2016).

From the perspective of strong sustainable consumption, the evidence concerning improved metering and billing is only slightly encouraging. A meta-analysis by Delmas et al. (2013) indicated that information strategies reduced residential energy consumption by 7% on average, though with variable results from one study to another. Given the scale of the strong sustainable consumption challenge, this is a good start, but insufficient. However, current efforts to provide more information (for example, via smart meters) and enable active energy citizenship are positive in the sense that they enable consumers to gain agency – for example, by joining energy cooperatives (European Commission, 2015). The concern is that only a small group of pioneering consumers are enthusiastic enough about energy for such active engagement, whereas most consumers are not particularly interested in their energy consumption on a daily basis due to other pressing concerns (Heiskanen and Matschoss, 2016).

3. Beyond rationality: The promise and limitations of behavioural economics and 'nudges'

Decades of research on the 'energy efficiency gap' (Gillingham and Palmer, 2014) indicate that consumers' behaviour is far from rational, if rationality is defined in a narrow, calculative sense. The fact that people consistently underinvest in energy conservation, as well as other observations from behavioural economics,

have gained increasing prominence in the public debate, not the least thanks to best-selling books like *Nudge* (Thaler and Sunstein, 2008) and *Thinking Fast and Slow* (Kahneman, 2011). Due to the overall political status of economics, and the behavioural economists' focus on empirical observation and evidence-based policy, behavioural economics has made a breakthrough into sustainable consumption policy – it probably can be said to represent the current mainstream policy paradigm (Organisation for Economic Co-operation and Development, 2017).

The underlying argument of 'nudges' is that most or our daily behaviour is based on 'fast' (less-conscious) thinking (Kahneman, 2011), and thus is prone to a host of biases and errors. Consumers are unable to make rational choices, either in self-interest or in accordance with their (pro-environmental, pro-social) preferences. The solution thus is to design better 'choice architectures', that is, decision settings and environments that 'alter people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives' (Thaler and Sunstein, 2008: 6). This definition could include the provision of information (Ölander and Thøgersen, 2014), but nudges typically attempt to bypass higher-order information processing. Typical nudge tools (Lehner et al., 2016; Thaler and Sunstein, 2008) include:

- *Simplification and framing of information* that aims to influence fast, unreflective thinking. For example, instead of kilowatt hours, electricity bills feature a graphic comparison to previous months and typical peer consumption, and smiley faces if consumption has decreased.
- *Changes to the physical environment* that aim to steer unreflective behaviour rather than overloading people with information. For example, people are directed to use the stairs with arrows painted on the floor, or are prompted to choose vegetarian options via cafeteria design.
- *Changes to default settings* that build on people's propensity to stick with the status quo or the situation that requires the least effort (or to consider the default as some kind of official endorsement; see Schubert, 2017). For example, green electricity can be offered by default. Consumers can de-select this if they prefer the conventional options.
- *The use of descriptive social norms* that builds on people's desire to behave 'normally' (some behavioural economists call this herding bias). For example, residents are informed with door-hangers that people in their county typically use fans instead of air conditioning to keep cool.

There is evidence that some individual nudges are indeed quite effective: in particular, changes to default settings (Lehner et al., 2016). In a natural experiment, 95–99% of customers kept a 'green electricity default' rather than switching to 'black electricity' (Pichert and Katsikopoulos, 2008) and reducing plate size in hotels while providing social cues led to 20% less food waste (Kallbekken and Sælen, 2013). Other than defaults, one of the most effective nudges that Lehner et al. (2016) found was an experiment by Wansink (2007) that reduced the consumption of Pringles crisps by 50% by dyeing every seventh crisp red (thus allowing consumers

to monitor how many crisps they had eaten). Such quantitative evidence is highly attractive to policymakers who feel they have finally found a tool for sustainable consumption policy (Jones et al., 2014).

However, these examples also illustrate one of the severest limitations to the use of behavioural economics in sustainable consumption policy. Delivering each of these effective nudges described above on a large scale requires great effort, often with more modest results than those described above. The large-scale rollout of informative energy bills, for example, offering the type of simplification and framing described above, reduced energy consumption by about 2% (Allcott and Mullainathan, 2010). Moreover, influencing the myriad choices that consumers fail to 'get right' requires the collaboration of market players such as energy companies, hotels and manufacturers. Such collaboration might in some cases be in their interest – that is, hotels may indeed desire to reduce food waste – but the opposite could also be the case (for example, the Pringles example above). From a policymaker's perspective, using nudges to promote strong sustainable consumption on a large scale would require a huge administrative effort in the micromanagement of consumers' choice architectures (Lehner et al., 2016; Wilson and Dowlatabadi, 2007).

There are also discussions about the legitimacy of nudges. While our consumer society is replete with subliminal marketing, it is not obvious that such tools are legitimate for policymakers in democratic societies (Goodwin, 2012). Concern has also been raised that covert nudges might alienate people from the sustainable consumption agenda if the means used are seen as illegitimate (Felsen et al., 2013; Lehner et al., 2016). Some psychologists have questioned the basic argument of libertarian paternalism – the notion of cognitive biases – and emphasize the inevitability and benefits of cognitive heuristics instead (Gigerenzer and Gaissmaier, 2011). However, this in itself would not call into question the use of nudges in a sustainable consumption context where nudges can be deemed non-paternalistic: that is, their aim is to promote social welfare and internalize environmental externalities rather than guide people towards their own (presumed) interests (Nagatsu, 2015; Schubert, 2017).[2] From this perspective, social nudges are no different from other types of institutions that solve social dilemmas (Nagatsu, 2015).

From the perspective of strong sustainable consumption, evidence concerning the effectiveness of nudges and other behavioural interventions is not clear cut. Spectacular individual success stories do exist, but these interventions were very carefully designed and focused on particular behaviours, each only representing a small portion of consumption patterns. From the perspective of treating consumers as citizens, moreover, the picture concerning nudges is mixed. Schubert (2017) has argued that when implemented in a transparent and democratic fashion, nudges might enhance citizen awareness of the hidden commercial manipulation shaping our decisions. Yet as a social engineering solution, nudging also runs the risk of depoliticizing and individualizing sustainability and thus overlooking the deeper socio-cultural roots of environmental and social problems (Schubert 2017).

4. The academic shift beyond behaviour change: From consumption choices to social practices

Parallel to the rise of behavioural economics in the sustainable consumption discussion, criticism of the individualist focus of consumption research has gained ground in the sustainable consumption community. It follows on from an interest in 'ordinary consumption' (Gronow and Warde, 2001) in the sociology of consumption. This has been reinforced by a growing realization in the sustainable consumption community that we should focus on overall resource use and on re-evaluating how priority areas such as food, housing and mobility are provided (Fuchs and Lorek, 2005; Heiskanen and Pantzar, 1997; Lorek and Fuchs, 2013).

Social practice theory makes two important arguments for sustainable consumption. First, it addresses some deficiencies of the methodologically individualist stance in most previous research on consumption (Heiskanen et al., 2010) and moves the focus from isolated behaviours towards socially shared practices, that is, embodied habits, institutionalized or otherwise shared knowledge, meanings and engagements, and materials and technologies (see for example, Gram-Hanssen, 2015; Schatzki, 2002). Cultural conventions define appropriate ways of consumption: what a decent home is like, how people should dress and what and when they should eat (Shove, 2003), and consumption patterns are further shaped by shared infrastructures, such as building, energy and information and communications technology (ICT) systems, and by (often commercial) provision systems, like the available supply of goods in supermarkets. These place material constraints on changes towards sustainable consumption, while also communicating particular symbolic meanings to consumers.

Second, social practice theory moves the focus from efforts towards changing particular types of behaviours (like energy conservation) to the root causes of unsustainable consumption. People do not consume energy as such, but rather perform different kinds of practices that, in different ways, entail energy use. So, for example, rather than considering how to get people to purchase energy-efficient washing machines, social practice theory investigates how and why Europeans wash so much laundry each year (Mylan and Southerton, 2017; Shove, 2003). Rather than trying to get consumers to engage with energy conservation, for example, social practice theory asks how energy consumption is driven by changes in daily routines such as showering, and shared conventions such as expectations concerning cleanliness or thermal comfort (Gram-Hanssen, 2017; Shove and Walker, 2014). While some consumers might be willing to make changes in their lives, such changes can be exceedingly difficult if they run counter to shared cultural, infrastructural and market conventions and expectations (Heiskanen et al., 2010).

Much of recent research on mundane consumption has indeed been based on social practice theory. It embraces the idea that energy usage is configured through complex relations between people's personal, routinized lives and the wider development of material and social structures, and that these relations should be in focus on under-

standing (increasing) consumption (see Gram-Hanssen, 2015; Røpke, 2009; Shove, 2014; Shove and Walker, 2010). Within energy consumption research, attention has also been focused on what happens inside and outside the home. Such research explores how people live their lives in relation to other people, things and places, and what the role is of 'unconventional' or 'non-human' energy consumers, such as 'babies, pets, pests and pool pumps' (Butler et al., 2016; Strengers et al., 2016). It also explores how new technologies (like mobile phones, computers, cars and heating systems) extend and change the boundaries of our homes (Wallenborn and Wilhite, 2014).

Social practice theory thus challenges what Keller et al. (2016) call the 'mainstream paradigms' of sustainable consumption. A focus on providing information alone is not enough since daily practices create complex systems. Skilful performances are negotiated in relation to other people and systems, and nudging individual behaviours does not go far enough in addressing escalating societal expectations regarding 'cleanliness, comfort and convenience' (Shove, 2003). Despite an increasing interest in social practice theory in academic research, the implications for policy have remained quite general. This is the case even though many policies already have implications for daily practices and their transformation (Shove and Walker, 2010). Much of the research on social practices highlights their complexity, contextuality and diversity – aspects that often present policymakers with 'don't' rather than 'do' types of implications. However, there are some examples of practical policy implications drawing from social practice theory. Shove (2014) and Spurling et al. (2013) argue that policy makers should:

1. Focus on transforming collective conventions, working simultaneously at transforming or 're-crafting' meanings, competencies and material foundations. For example, they could provide support for changing to renewable heating systems, together with the development of common meanings (like self-sufficiency and autonomy) and the development of competencies and identities as communities having a more active role in energy (Jalas et al., 2017; Raven et al., 2008).
2. Deliberately reconfigure the relations between competing practices, such as heating space versus heating people, thus setting in motion positive feedback effects to support the favoured practice over the non-favoured, unsustainable one. For example, adaptive heating practices – that is, systems where users adapt to changes in temperature, rather than expect steady-state thermal comfort always and everywhere – entail different material products (Kuijer, 2014), building systems standards (Taleghani et al., 2013), and user competencies and meanings (Strengers and Maller, 2011) compared to practices based on steady-state thermal comfort. The more people (consumers, building engineers, regulators) engage with adaptive thermal comfort, the greater the political and technical support for such adaptive systems.
3. Modify the ways practices interlock to make the system of practices as a whole more sustainable. For example, the required size of homes depends in part on the number of goods and activities that need space in the home (Heiskanen and Jalas, 2003).

4. Look beyond behavioural change and environmental policy at the diverse drivers of escalating consumption. For example, in the case of housing, there is a need to reconsider policies that offer tax advantages for speculating on real estate, housing and building standards, thus leading to increased use of space and health policies that promote increased energy use (Strengers and Maller, 2011).

Until now, many of the studies on more or less sustainable consumption practices have focused on qualitative, in-depth analyses of day-to-day activities (that is, practices-as-performances; see Schatzki, 2002). The small-scale interventions and experiments to reveal and change daily performances in households have been insightful (for example, Devaney and Davies, 2017; Jack, 2013; Kuijer, 2014; see also Laakso and Heiskanen, 2017). Although disruptions in routines are often inconvenient or even severe, they nevertheless entail opportunities to explore and learn about new practice configurations (Laakso, 2017; Wallenborn and Wilhite, 2014). However, there are still few clear proposals for scaling up these changes to transform practices-as-entities (Hui et al., 2017; Laakso, 2017). From the perspective of strong sustainable consumption, social practice theory thus provides promising avenues by moving attention towards root causes of consumption. However, challenges remain in translating these insights into policy measures.

5. Where do we stand in terms of moving towards more sustainable practices?

Strong sustainable consumption emphasizes the need for a reduction in overall resource use (Fuchs and Lorek, 2005), and studies show that alternatives exist to decarbonize and dematerialize consumption. Girod et al. (2014), for instance, have reviewed the carbon emissions of products in the consumption categories of food, shelter, travel, goods and services, and identified options compatible with the greenhouse gas intensity required in 2050 to limit global warming within 2°C above pre-industrial levels. Lettenmeier et al. (2014) suggest that a sustainable level of resource use is achievable while providing for nutrition, housing, household goods, mobility, leisure activities, other purposes and public services. Research has demonstrated how households are able to significantly reduce the environmental impacts of their consumption, at least temporarily (Laakso, 2017). On the other hand, studies also show how and where the greatest impediments lie to achieving a sustainable level by individual actions alone (Hirvilammi et al., 2013). The challenge is thus to transform practices-as-entities: shared patterns of consumption shaped by collective rules, infrastructures and systems of provision. This can (and should) occur in two ways: through a scaling up of local change initiatives and through adjustment of society's macrostructures, that is, policies that shape the conditions for more or less sustainable consumption.

Civil society movements have been the originators of many more sustainable practices that are currently mainstream, such as recycling (Lounsbury et al., 2003) and

local renewable energy production (Jamison, 2001). It is encouraging that cities and local governments have taken an active role recently in trying out new practices that support more sustainable consumption patterns, particularly in the case of housing and mobility (Bulkeley and Castán Broto, 2013). Local experiments can nurture legitimacy and create a sense of familiarity, while challenging norms and conventions (Heiskanen et al., 2015), and open up the contextual and cultural aspects of consumption (Lutzenhiser, 2014; Shove, 2018). They can also shift power to the local people and empower them towards a more active role in the energy system. This also entails the development of new competencies, which are not only about the provision of information, but also about developing localized and mutually aligned capabilities between consumers and local service providers (Heiskanen et al., 2017; Neij et al., 2017). A close analysis of such 'learning by doing' can also shed light on the 'fossilization' of practices, that is, processes during which a practice becomes outmoded (Watson, 2013).

The challenge is that sustainable consumption cannot be 'strong' unless it is adopted by the majority of consumers. Lessons concerning the conditions for scaling up more sustainable practices can be drawn from practice/theoretical analyses of how, for example, Nordic walking became a recognized form of exercise that travelled across continents (Pantzar and Shove, 2010) and how DIY home improvements caught on among previously unskilled consumers (Watson and Shove, 2008). Relevant lessons can also be drawn from research on sociotechnical change: for example, how local solar initiatives grew into a global industry (Dewald and Truffer, 2011), how early passive house experiments led to standards and legislation (Ornetzeder and Rohracher, 2009), and how local organic food initiatives turned into a mainstream industry (Smith, 2007). Finally, research on institutional entrepreneurship (Levy and Scully, 2007) and change in strategic action fields (Fligstein and McAdam, 2012) illustrates the conditions under which local initiatives can grow to challenge dominant institutions and interests.

A common thread in previous research on how local innovative practices become mainstream is that mainstreaming is uncertain, contingent and takes a long time. Since we cannot afford to wait decades for strong sustainable consumption to emerge from the grassroots, top-down change through policy reform is equally necessary. In this context, social practice theory suggests that we seriously consider how current policies – beyond explicitly environmental policies – shape consumption. The increased interest in regulatory impact assessment (Radaelli, 2005) could helpfully be informed by a deeper understanding of the interconnections between practices. How, for example, do tax breaks for real estate investment influence urban form[3] and the related expectations concerning housing, or how is housing influenced by educational or labour market policies? Sustainable consumption policy cuts across policy sectors and requires much greater policy coordination than single-sector policies (Heiskanen et al., 2014).

As already illustrated in many examples by Spurling et al. (2013) and Shove (2015), policies that transform practices already exist. The most progressive transport poli-

cies are already considering how materials, meanings and competencies are linked in moving towards more sustainable mobility practices (Dowling and Kent, 2015; Larsen, 2017). In contrast, there is no similar understanding of different uses of the home (and thus different energy-related practices at home). A practice-theoretical approach could provide some tools in answering questions such as how to move from maintaining the present practices to questioning what energy is for and what kind of services it provides (Shove, 2018), what a home is, how different aspects of the home are related to energy use and where the boundaries of control and cooperation are drawn (Gram-Hanssen and Darby, 2018; Wallenborn and Wilhite, 2014), and what kinds of expectations and diversification of consumption are created by new technologies (Pantzar and Shove, 2010; Røpke and Christensen, 2013).

When considering residential energy use from this perspective, one particularly sensitive question relates to the increasing amount of living space per person in Europe, largely due to the growing number of single households. One-third of all households in the EU-28, for example, are composed of a single person and this has been the fastest growing group during the past ten years (Eurostat, 2017). In Sweden, over half of all households are single-person households, followed by more than 40% in Lithuania, Denmark, Finland and Germany. Whereas living alone is often related to situations in life, the ideal of having one's own, private space or feelings attached to a particular place, this trend nevertheless has implications for energy use due to the increasing number of household appliances and the increasing amount of space to be heated. Considering whether some products (for example, sports equipment) and activities (for example, bathing) could be located outside the home, for example, via shared services (for example, rental, public baths, libraries) and enabled by careful town planning, could offer options for reducing the growth of the floor space of private homes (Fremstad et al., 2018).

The above-mentioned questions undeniably require new, more comprehensive expertise and collaboration among various actors. Transitions in consumption practices require parallel transitions in practices of governing, manufacturing, investing, and so on (Watson, 2013). Whereas expertise in technological improvements such as renewable energy and smart home solutions can be achieved through education, there is no such expertise in changing the meanings attached to home – who is to say how much space people need and what kind of space and facilities are required by different needs? Practice-based living laboratories can be one way to facilitate collaborative processes in which knowledge is co-created among various actors to find new ways of consumption that are more sustainable (Laakso et al., 2017). Such transdisciplinary approaches can provide means to tackle the complexity, contextuality and diversity that are embedded in social practices (Heiskanen et al., 2018), while deliberation based on practical experience can open discussions on the politics of practices (Sayer, 2013). A strong sustainable consumption approach suggests that such considerations are not only useful, but will also be unavoidable when current consumption patterns and the current economic system hit the wall of planetary boundaries.

6. Conclusion and implications: Prospects of providing solid policy advice for sustainable consumption

We have shown that the three research areas reviewed here make a contribution to sustainable consumption. However, information interventions and nudges fall short in terms of addressing natural resource consumption in its totality (for instance, strong sustainable consumption), whereas the promise of social practice theory to address escalating expectations in consumer society is still embryonic in terms of policy implications. We have outlined some bottom-up and top-down policy pathways that could be pursued in parallel, yet these would definitely require significant changes in how sustainable consumption policy is practised.

Such change is likely to be evolutionary rather than revolutionary. At first sight, the bodies of research reviewed above entail contradictory policy implications, which policymakers are likely to experience as a barrier to utilization of research (Heiskanen et al., 2014). This, however, does not mean that findings could not be integrated. Several proposals advocating policy mixes for sustainable consumption (for example, Nissinen et al., 2015) could be integrated (practically, if not ontologically and epistemologically) with a practice approach. Similarly, while some academics might take issue with behavioural economists' notions of cognitive biases, few would disagree with the idea of changing default settings or changing the physical environment in order to promote sustainable consumption. Information about the environmental impacts of consumption and the available alternatives to growing resource consumption might not change behaviour, but is critical for the engagement of citizens.

A more problematic issue for policy uptake is the disciplinary division within the policy sectors responsible for (un)sustainable consumption. The notion of 'editing out' unsustainable consumption implies all-powerful policymakers sitting outside the society they are attempting to change (Shove and Walker, 2010), rather than the real-life policymakers who are embroiled in the practices they are attempting to change. This is evident if we take seriously the proposal from social practice theory to reform policies that are not explicitly 'environmental', yet have indirect impact by driving unsustainable consumption. These policies cut across several sectors that would need to be engaged in a common search for better solutions.

One proposal that policymakers themselves have advocated is to engage in closer co-construction of knowledge, for example through action research and real-life experimentation (Heiskanen et al., 2014). Creating networks of policy actors, co-creating knowledge on practices and their potential for change, and experimenting in real life could provide avenues for research, policy and citizens to jointly engage in discussions on why there is growing consumption of, for example, appliances and living space (Gram-Hanssen, 2015; Heiskanen et al., 2014). Through hands-on engagement in change initiatives, policymakers cannot remain distant 'editors' of unsustainable consumption patterns, but are faced with the need to change their own policy practices. Strong sustainable consumption is still an issue that political

discourse prefers to avoid, since current policies are geared to questions of efficiency rather than sufficiency. This, however, does not mean that this state of affairs is inevitable, given the pressing needs of climate change and global environmental degradation.

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NOTES

1 Kormos and Gifford (2014) have shown that self-reports only explain about 21% of the variance in observed behaviours, yet their meta-analysis failed to identify a social desirability bias – that is, according to their meta-analysis, people simply do not remember their behaviour, or survey instruments are not sufficiently perceptive.

2 While Thaler and Sunstein (2008) anchor the concept of nudge within the philosophy of libertarian paternalism, it has been argued that pro-social nudges used for sustainable consumption do not require a paternalist stance to individual autonomy. Social nudges encourage the voluntary provision of public goods (Nagatsu, 2015), that is, provide a way to avoid social dilemmas.

3 'Urban form is defined as the physical characteristics that make up built-up areas, including the shape, size, density and configuration of settlements. It can be considered at different scales: regional, urban, neighbourhood, block and street. Urban form evolves constantly in response to social, environmental, economic and technological developments; planning, housing and urban policies; and health, transport and economic policies (Williams, 2014).

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